UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/363,748	07/30/1999	CAROL WATKINS	108137.701	8501

27160 7590 11/07/2003

PATENT ADMINSTRATOR
KATTEN MUCHIN ZAVIS ROSENMAN
525 WEST MONROE STREET
SUITE 1600
CHICAGO, IL 60661-3693

EXAMINER	
CRANE, LAWRENCE E	

ART UNIT	PAPER NUMBER
1623	

DATE MAILED: 11/07/2003

35

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/363,748	Applicant(s) Watkins et al.	
	Examiner L. E. Crane	Group Art Unit 1623	

- THE MAILING DATE of this communication appears on the cover sheet beneath the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE --03-- MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be filed after six months from the date of this communication.
- If the prior for reply specified above is less that thirty (30) days, a reply within the statutory minimum of thirty days will be considered timely.
- If NO period for reply is specified above, such period shall ,by default, expire SIX (6) MONTHS from the date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 USC §133).

Status

[X] Responsive to communication(s) filed on -09/22/03 (RCE, amdt F, declaration & IDS#3)-.
[] This action is **FINAL.**
[] Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

[X] Claims ---39, 43-44 and 46-49--- are pending in the application. Claims -40-42, 45 and 50- have been cancelled.
Of the above claim ---[]--- is withdrawn from consideration.
[] Claim(s) ---[]--- is/are allowed.
[X] Claims ---39, 43-44 and 46-49--- are rejected.
[] Claim(s) ---[]--- is/are objected to.
[] Claim(s) ---[]--- are subject to restriction or election requirement.

Application Papers

[] See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
[] The proposed drawing correction, filed on -[]- is [] approved [] disapproved.
[] The drawing(s) filed on -[]- is/are objected to by the Examiner.
[] The specification is objected to by the Examiner.
[] The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119(a)-(d)

[] Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
[] All [] Some* [] None of the CERTIFIED copies of the priority documents have been
[] received.
[] received in Application No. (Series Code/Serial Number) -[]-.
[] received in the national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: -[]-.

Attachment(s)

[X] Information Disclosure Statement(s), PTO-1449, Paper No(s). --33--
[X] Notice of Reference(s) Cited, PTO-892
[] Notice of Draftsperson's Patent Drawing Review, PTO-948
[] Interview Summary, PTO-413
[] Notice of Informal Patent Application, PTO-152
[] Other: -[]-.

Claims **40-42, 45 and 50** have been cancelled, claims **39, 43, 44, 46 and 49** have been amended, pages 6 and 12 of the disclosure have been amended, and no new claims have been added as per the amendment filed September 22, 2003.

Claims **39, 43-44 and 46-49** remain in the case.

Examiner notes the submission of a declaration filed under 37 C.F.R. § 1.132 by applicant Wurtman. The declaration asserts that the terms "a uridine phosphate" and "uridine phosphates" have a well recognized meaning and that this meaning is limited to the compounds uridine-5'-monophosphate, uridine-5'-diphosphate and uridine-5'-triphosphate referred to in the declaration as "the three naturally occurring 5-prime phosphates of uridine." Examiner respectfully disagrees, noting that the term "uridine phosphate" may be read to include the three above noted compounds and a substantial array of other compounds including uridine-2',3'-cyclic phosphate, uridine-3',5'-cyclic phosphate, uridine 2'-phosphate, uridine 3'-phosphate and numerous oligo- and polyphosphates which will not be listed here. Examiner refers applicant to any standard reference (The Merck Index, *Biochemistry* by Lehninger, etc.) wherein many of these compounds are pictured and/or described in detail. It is examiner's view that applicant should avoid generic terms of the kind noted because said terms are misleading and overly broad in light of the disclosure wherein the 5'-mono-, 5'-di- and 5'-tri-phosphates of uridine are the only compounds shown to have the desired medicinal effect. Responses following rejections address the remaining contents of the instant declaration.

Claims **39, 43-44 and 46-49** are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in

the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Inspection of the instant disclosure reveals no specific test data to support the generic limitation "enhancing memory" directed to the treatment of a disease condition or conditions, by the administration of any "uridine phosphate." For example, the noted claims read on the treatment of senile dementia, HIV-related dementia, and Alzheimer's disease, but the instant disclosure fails to provide any evidence that the instant method is effective in the treatment of any one of these disease conditions. Therefore, the instant disclosed exemplifications relevant to the instant claims are deemed to be entirely prospective and therefore lacking any enabling effect.

Applicant's arguments and declaration filed September 22, 2003 have been fully considered but they are not persuasive.

Applicant's declaration provides data which would have enabled the instant claim **39** and some of the subject matter in the claims dependent therefrom had it been submitted with the originally filed specification. However, said data was not provided with the originally filed application, and therefore this data cannot overcome the above rejection until such time as the data in the declaration is submitted as part of the disclosure in a CIP application, a course of action specifically recommended in the previous Office action. Applicant is also requested to note the newly cited art now of record obtained by the promised new search of the amended subject matter now claimed, some of which are cited in art rejections below.

Claims **39, 43 and 44** are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term, *In re Hill,* 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The terms "a uridine phosphate" and "uridine phosphate" in claims **39, 43 and 44** are used by the claims to mean only 5'-UMP, 5'-UDP and/or 5'-UTP, while the accepted meaning is not limited to 5'-phosphorylated uridine molecules as noted above at page 2.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

> "A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent."
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States."
>
> (e) the invention was described in a patent granted on an application to another filed in the United States before the invention thereof by applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent."

Claims **39 and 43-44** are rejected under 35 U.S.C. §102(**b**) as being anticipated by **Rüthrich et al.** (PTO-892 ref. **UA**).

Applicant is referred to the abstract of the noted reference which teaches that the administration of uridine is correlated with enhanced memory retention in rats.

Claims **39 and 43-44** are rejected under 35 U.S.C. §102(**b**) as being anticipated by **Miyazaki et al.** (PTO-892 ref. **SA**).

Applicant is referred to the abstract which discloses that the administration of a mixture of ribonucleotides including 5'-UMP "improved mammalian learning acquisition and memory retrieval."

The following is a quotation of 35 U.S.C. §103(**a**) which forms the basis for all obviousness rejections set forth in this Office action:

> "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

Claims **39 and 43-44** are rejected under 35 U.S.C. §103(**a**) as being unpatentable over **Piazza et al. '459** (PTO-892 ref. **B**).

The instant claims are directed to enhancement of memory by administration to a host in need thereof an effective amount of a "uridine phosphate" which term applicant defines as 5'-UMP, 5'-DMP or 5'-UTP.

Applicant is referred to claim *1* in the **'759** reference wherein the subject matter claimed includes "treatment of disturbances of the nervous system ... " by "administering ... an effective amount of uridine ... ."

Applicant's admission at paragraph "3" of the declaration filed September 22, 2003 includes the statement that "[u]ridine is phosphorylated by ubiquitous pyrimidine nucleoside kinase enzymes ("uridine kinase") to form uridine monophosphate (UMP). These enzymes attach the phosphate moiety to the 5-prime hydroxyl on the ribose ring of the uridine molecule. UMP can be further phosphorylated to form uridine 5-prime di-phosphate (UDP) by the enzyme(s) pyrimidine nucleoside monophosphate kinase. UDP can be converted to uridine 5-prime tri-phosphate (UTP) by the nucleoside diphosphokinase enzymes(s)." Therefore, the treatment of a human host with uridine is, by applicant's own admission, well known in the art to be entirely equivalent to treatment of the same host with any one of 5'-UMP, 5'-UDP or 5'-UTP or a mixture thereof.

It would have been obvious to the ordinary practitioner to conclude, in light of applicant's own admissions of what is notoriously well known in the art, that the administration of uridine as taught by **Piazza et al. '459** would be in effect the administration of a mixture of uridine 5'-mono-, 5'-di- and 5'-tri-phosphates and would be expected to have the same effect as that claimed herein.

Therefore, the instant claimed method of memory enhancement would have been obvious to one of ordinary skill in the art having the above cited reference before him at the time the invention was made.

Claims **39 and 43-44** are rejected under 35 U.S.C. §103(a) as being unpatentable over **Polifarma '267** (PTO-892 ref. **L**).

The instant claims are directed to enhancement of memory by administration to a host in need thereof an effective amount of a

"uridine phosphate" which term applicant defines as 5'-UMP, 5'-DMP or 5'-UTP.

Applicant is referred to claim *6* of the **'267** reference which is directed to pharmaceutical compositions including " ... an amount of uridine therapeutically effective in reducing deficits in neuronal functional activity ... ." Whether this is accomplished by increasing cytidine levels in the brain or is otherwise directly effective is deemed to be impossible to determine.

Applicant's admission at paragraph "3" of the declaration filed September 22, 2003 includes the statement that "u]ridine is phosphorylated by ubiquitous pyrimidine nucleoside kinase enzymes ("uridine kinase") to form uridine monophosphate (UMP). These enzymes attach the phosphate moiety to the 5-prime hydroxyl on the ribose ring of the uridine molecule. UMP can be further phosphorylated to form uridine 5-prime di-phosphate (UDP) by the enzyme(s) pyrimidine nucleoside monophosphate kinase. UDP can be converted to uridine 5-prime tri-phosphate (UTP) by the nucleoside diphosphokinase enzymes(s)." Therefore, the treatment of a human host with uridine is, by applicant's own admission, well known in the art to be entirely equivalent to treatment of the same host with any one of 5'-UMP, 5'-UDP or 5'-UTP or a mixture thereof.

It would have been obvious to the ordinary practitioner to conclude, in light of applicant's own admissions of what is notoriously well known in the art, that the administration of uridine as taught by **Polifarma '267** would be in effect the administration of a mixture of uridine 5'-mono-, 5'-di- and 5'-tri-phosphates and would be expected to have the same effect as that claimed herein.

Therefore, the instant claimed method of memory enhancement would have been obvious to one of ordinary skill in the art having the above cited reference before him at the time the invention was made.

Claims **39 and 43-44** are rejected under 35 U.S.C. §103(**a**) as being unpatentable over **Merlini et al.** (PTO-892 ref. **T**) in view of applicant's own admission at paragraph "3" of the declaration filed September 22, 2003.

The instant claims are directed to enhancement of memory by administration to a host in need thereof an effective amount of a "uridine phosphate" which term applicant defines as 5'-UMP, 5'-DMP or 5'-UTP.

Applicant is referred to the abstract supplied, which teaches that administration of uridine is effective in improving several mental functions including "memorisation." Whether this is accomplished by increasing cytidine levels in the brain or is otherwise directly effective is deemed to be impossible to determine.

Applicant's admission at paragraph "3" of the declaration filed September 22, 2003 includes the statement that "u]ridine is phosphorylated by ubiquitous pyrimidine nucleoside kinase enzymes ("uridine kinase") to form uridine monophosphate (UMP). These enzymes attach the phosphate moiety to the 5-prime hydroxyl on the ribose ring of the uridine molecule. UMP can be further phosphorylated to form uridine 5-prime di-phosphate (UDP) by the enzyme(s) pyrimidine nucleoside monophosphate kinase. UDP can be converted to uridine 5-prime tri-phosphate (UTP) by the nucleoside diphosphokinase enzymes(s)." Therefore, the treatment of a human host with uridine is, by applicant's own admission, well known in the art to be entirely

equivalent to treatment of the same host with any one of 5'-UMP, 5'-UDP or 5'-UTP or a mixture thereof.

It would have been obvious to the ordinary practitioner to conclude, in light of applicant's own admissions of what is notoriously well known in the art, that the administration of uridine as taught by **Merlini et al.** would be in effect the administration of a mixture of uridine 5'-mono-, 5'-di- and 5'-tri-phosphates and would be expected to have the same effect as that claimed herein.

Therefore, the instant claimed method of memory enhancement would have been obvious to one of ordinary skill in the art having the above cited reference before him at the time the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. §103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. §1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. §103(c) and potential 35 U.S.C. §§102(f) or (g) prior art under 35 U.S.C. §103(a).

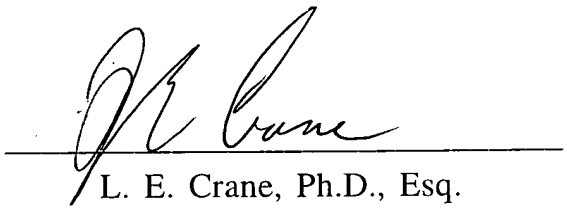
Papers related to this application may be submitted to Group 1600 via facsimile transmission(FAX). The transmission of such papers must conform with the notice published in the Official Gazette (1096 OG 30, November 15, 1989). The telephone numbers for the FAX machines operated by Group 1600 are **(703) 308-4556** and **703-305-3592**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner L. E. Crane whose telephone number is 703-**308-4639**. The examiner can normally be reached between 9:30 AM and 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson, can be reached at (703)-308-4624.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is 703-**308-1235**.

LECrane:lec
11/06/03



L. E. Crane, Ph.D., Esq.
Patent Examiner
Technology Center 1600